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09/26/2006

Joaquin Espuelas Penalva

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6323

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EXAMINER

CHOI, PETER Y

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

01/03/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/594,283	PENALVA, JOAQUIN ESPUELAS	
	Examiner	Art Unit	
	PETER Y. CHOI	1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 56,57,62-65 and 67-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 56,57,62-65 and 67-69 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 56, 57, 62-65, and 67-69 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 56, 57, 62-65, and 67-69, claims 56, 57 and 67 recite a biocidal compound, 1-bromo-3-chloro-5.5-dimethyldantoin. Applicant's specification, as originally filed and as amended in Applicant's submission of November 10, 2010, does not set forth 1-bromo-3-chloro-5.5-dimethyldantoin. Although Applicant acknowledges the spelling error in Applicant's remarks of May 11, 2010, it is recommended that Applicant amend the specification to correct the error.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1786

4. Claims 56, 57, 62-65, and 67-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,514,306 to Rohrbach in view of US Pub. No. 2003/0031687 to Falder, USPN 2,920,997 to Wolf and USPN 5,603,941 to Farina.

Regarding claims 56, 57 and 67, Rohrbach teaches a filter for filtration and elimination of microbials comprising a filter selected from the group consisting of nonwoven fabric and sheets, the filter formed from fibers cut, each of the fibers previously treated with an anti-bacterial compound so that the anti-bacterial compound is integrated into all of the body and core of the fiber so that the treated fibers exhibit anti-bacterial properties, wherein the anti-bacterial compound is TRICLOSAN™, wherein the fibers are thermoplastic polymers such as polyamides, polyesters, polyolefins or combinations thereof, and wherein the filter is further defined as being constructed from a mixture of non-woven fabrics (see entire document including column 1 line 7 to column 3 line 17, column 3 line 40 to column 7 line 5, claims 1-13, Figures 1-5). It should be noted that the TRICLOSAN™ of Rohrbach appears to be substantially similar to the claimed anti-bacterial compound (see Applicants' specification at page 24).

Rohrbach does not appear to teach that the filter further comprises the claimed biocide, that the filter is further defined as being constructed of at least two layers of nonwoven fabrics so as to form a sandwich of layers, and that the treated fibers exhibit anti-bacterial properties at temperatures above 200°C.

Regarding the claimed biocide, Rohrbach suggests various embodiments additionally comprising multiple anti-microbials, as Rohrbach recites that the filter comprises at least one anti-microbial agent in combination (Rohrbach, column 3 line 63 to column 4 line 6).

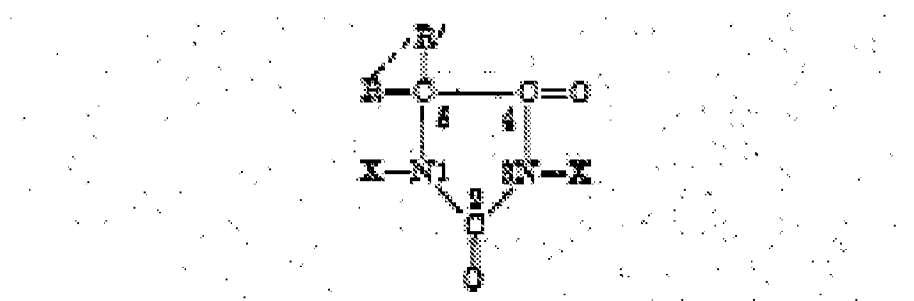
Additionally, Rohrbach suggests that anti-microbial agents include any substance or combination

Art Unit: 1786

of substances capable of either preventing, slowing or stopping the growth and/or proliferation of any type of microbial population, such as, but not limited to bacteria, fungi and the like.

Falder additionally teaches anti-microbials which may be used in filters (Falder, paragraphs 0001-0032, 0045-0087, 0090-0101, 0250-0285, Tables 13-15). Falder acknowledges that microbial colonies replicate rapidly to form colonies, forming biofilms on any substrate surface exposed to bacteria and some amount of water (Id., paragraphs 0002 and 0003). Falder discloses that biofilms are more hazardous to health than individual microorganisms (Id.) and that biofilms can be formed by a single bacterial species, or several species of bacteria and fungi (Id.). Falder discloses and suggests that anti-microbial agents vary in their effectiveness as they are only effective against certain microorganisms (Id., paragraph 0025), which entails that their use is limited as they are not effective against all types of microorganisms (Id.).

Wolf teaches a class of fungicides comprising 1,3-dihalohydantoin (Wolf, column 1 line 16 to column 4 line 26). Wolf teaches that the fungicidal compositions comprise hydantoin of the formula:

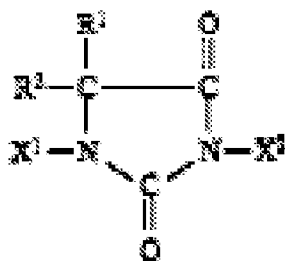


Wherein X is a halogen such as chlorine or bromine and R and R' may comprise alkyl groups such as methyl groups (Id., column 1 line 22 to column 3 line 16). Wolf teaches that the fungicide can be applied to surfaces of cloths, textiles and woven fibers, wherein the fungicide is

Art Unit: 1786

interspersed between the fine structure of the materials and is in intimate contact with the materials (Id., column 3 lines 17-74).

Additionally, Farina similarly discloses a composition comprising dihalogenated hydantoin which is used to remove or inhibit the formation of biofilms (Farina, column 1 line 7 to column 4 line 27). Farina teaches that the composition uses biocides to enhance overall biocidal control, as biocides prevent the growth of, inhibit the growth of, or kill microorganisms (Id., column 1 line 55 to column 2 line 29). Farina teaches that dibromohydantoin, dichlorohydantoin, or bromochlorohydantoin are most preferred having the formula:



Wherein R^1 and R^2 are independently methyl or ethyl and X^1 and X^2 are independently chlorine or bromine, such as bromochloro-5,5-dimethylhydantoin (Id., column 2 line 30-48). Farina teaches that any substrate susceptible to the formation of biofilms and/or growth of microorganisms is suitable for treatment with the aforementioned compositions (Id., column 4 lines 11-24).

Based on the totality of the teachings of the prior art, it would have been obvious to one of ordinary skill in the anti-bacterial fabric art at the time the invention was made to form the anti-bacterial fabric of Rohrbach, wherein the anti-bacterial fabric additionally comprises a biocide such as bromochloro-5,5-dimethylhydantoin, as taught by the Wolf and Farina, as Falder discloses that biofilms are known to form on filters and that multiple anti-bacterial and/or anti-

Art Unit: 1786

fungus compositions may be necessary to inhibit the growth of various microorganisms, and motivated by the desire of forming a conventional anti-bacterial fabric with additional fungicidal characteristics to inhibit the predictable growth of biofilms on the fabric, as the resulting anti-bacterial fabric would predictably comprise the combined advantageous and beneficial characteristics of anti-bacterial and anti-fungal properties.

Regarding the claimed configuration of the layers, Rohrbach teaches that the filter includes one or more layers of a fibrous media that accomplishes the actual filtration (Id., column 3 lines 48-55). Although Rohrbach does not appear to specifically teach that the filter is further defined as being constructed of at least two layers of nonwoven fabrics so as to form a sandwich of layers, it naturally flows from the teachings of Rohrbach that forming the filter having multiple layers, such as more than one layer, three or four or five layers, increases the thickness, strength and rigidity of the filter, in addition to increasing the filter and/or barrier properties of the filter. Additionally, the multiple layers affect the tortuosity of the filter, wherein one of ordinary skill in the art can tailor the filter properties such as the permeability of the filter by varying the number of layers. Therefore, it would have been obvious to one of ordinary skill in the filter art at the time the invention was made to form the filter of Rohrbach, wherein the filter comprises three or four or five nonwoven layers, as the prior art suggests that the filter may comprise multiple layers based on the desired filtration properties, and motivated by the desire of forming a conventional filter having increased thickness, strength and rigidity suitable for the intended application.

Alternatively, it should be noted that since Rohrbach teaches that the filter may comprise one or more layers of fibrous media, in addition to a support member, it would have additionally

Art Unit: 1786

been obvious to one of ordinary skill in the filter art at the time the invention was made to form the filter of Rohrbach, comprising multiple layers of identical and/or substantially similar nonwoven mats, motivated by the desire of forming a conventional filter having additional support layers to predictably increase the weight, thickness and dimensional stability of the resulting filter, based on the intended application.

Regarding the claimed property, although the prior art combination does not disclose the claimed property, it is reasonable for one of ordinary skill in the art to expect that the claimed anti-bacterial properties naturally flow from the treated fibers of the prior art combination, since the prior art combination teaches an invention with a substantially similar structure and chemical composition (nonwoven fabric comprising the claimed fibers and a TRICLOSAN™ anti-bacterial composition and the claimed biocide integrated into the body and core of the fiber) as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the filter of the prior art combination, wherein the fibers exhibit anti-bacterial properties at elevated temperatures, as filters are known in the art as being used and suitable for use in various environments having varying temperatures, and forming the fiber having anti-bacterial properties at elevated temperatures by varying the amount of anti-bacterial within the fiber requires only routine skill in the art.

Regarding the preamble, the prior art combination does not appear to specifically teach that the filter is used for filtration and elimination of Legionella Pneumophila in any installation at risk from Legionella Pneumophila proliferation and that the filter eliminates Legionella

Art Unit: 1786

Pneumophila. However, a preamble is generally not accorded any patentable weight where it merely recites the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the prior art combination teaches a substantially similar structure and composition (nonwoven fabric comprising the claimed fibers and a TRICLOSANTM anti-bacterial composition and the claimed biocide integrated into the body and core of the fiber) as the claimed invention, the invention of the prior art combination appears to be capable of performing the claimed intended use.

Regarding claims 62-65, Rohrbach teaches that the fiber is a synthetic polymer chemical fiber (Rohrbach, column 5 line 1 to line 55). Polyolefins commonly known in the art include polyethylene and polypropylene. Additionally, Rohrbach expressly incorporates by reference USPN 5,057,368 to Largman as teaching a fiber suitable to practice the invention of Rohrbach. Largman teaches at column 7 line 64 to column 10 line 40 that the fiber may comprise a polyolefin such as polypropylene and that the fibers are suitable for use in filters. Therefore, Rohrbach appears to teach the claimed polypropylene fiber.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the filter of Rohrbach, wherein the fibers are polypropylene fibers, as the prior art teaches that the polypropylene fibers of Largman are suitable to practice the

Art Unit: 1786

invention of the prior art, and as it is within the level of ordinary skill to choose a suitable commercially available polyolefin such as polypropylene, based on the desired characteristics of the fiber, such as strength and formability.

Regarding claim 68, Rohrbach teaches that the sandwich further includes a non-woven fabric support (Rohrbach, column 3 lines 40-46). Additionally, it naturally flows from the teachings of Rohrbach that forming the filter having multiple layers, such as three or four or five layers, increases the thickness, strength and rigidity of the filter. Additionally, the multiple layers affect the tortuosity of the filter, wherein one of ordinary skill in the art can tailor the filter properties such as the permeability of the filter by varying the number of layers. Therefore, it would have been obvious to one of ordinary skill in the filter art at the time the invention was made to form the filter of Rohrbach, further including a nonwoven fabric support layer, as Rohrbach suggests that the filter may comprise multiple layers based on the desired filtration properties, and motivated by the desire of forming a conventional filter having increased thickness, strength and rigidity suitable for the intended application.

Regarding claim 69, Rohrbach teaches that the fibers are approximately 30 microns in diameter, may have a cross-section such as circular, hollow, multiple lobal, trilobal or similar, an elongated length or a filament (Rohrbach, column 5 line 1 to column 6 line 4). It should be noted that Rohrbach expressly incorporates by reference USPN 5,057,368 to Largman as teaching fibers within the scope of the prior art invention, wherein Largman teaches the use of filaments, which are known in the art as comprising continuous and/or indefinite length.

Additionally, it should be noted that a color from translucent white to black and any combinations thereof, reasonably constitutes all color ranges for fibers and/or filaments, and it is

Art Unit: 1786

reasonable for one of ordinary skill to expect that the fiber necessarily comprises a color within the claimed range. Alternatively, it would have been obvious to one of ordinary skill in the filter art at the time the invention was made to form the filter of Rohrbach, and determining a suitable color for the fiber, as it is within the level of ordinary skill to determine a suitable fiber color based on the desired aesthetics of the resulting filter.

Additionally, although the prior art combination does not appear to specifically disclose a fiber weight in the range of from 5 to 2,500 grams, it is reasonable for one of ordinary skill in the art to expect that fiber weight is based on the composition of the fiber in addition to the diameter and length of the fiber. Additionally, forming a filter with a longer and larger diameter fiber would reasonably result in a stronger, less flexible, thicker, and heavier fiber and resulting filter. Therefore, it would have been obvious to one of ordinary skill in the filter art at the time the invention was made to form the filter of Rohrbach, and further adjusting the weight of the fiber within the claimed ranges, motivated by the desire of forming a conventional filter having the desired strength, flexibility, dimensional stability, and weight suitable for the intended application.

Additionally, although the prior art combination does not appear to disclose the claimed fusion point in the range of from 60° C to 450° C, the prior art combination teaches identical and/or substantially similar fibers as the fibers disclosed in Applicant's specification pages 29-33. Therefore, it is reasonable for one of ordinary skill in the art to expect that the claimed property naturally flows from the structure in the prior art combination, since the prior art combination teaches an invention with a substantially similar structure and chemical composition

Art Unit: 1786

as the claimed invention. Products of identical structure and composition cannot have mutually exclusive properties. The burden is on the Applicant to prove otherwise.

Response to Arguments

5. Applicant's arguments filed November 10, 2010, have been fully considered but they are not persuasive. Applicant argues that in the claimed invention, there are no additional elements in the filter, and the fibers of the non-woven fabric are modified during their manufacture with the antimicrobial agent and biocide. Examiner respectfully disagrees. The claimed invention does not recite process limitations, such that the fibers are modified during their manufacture, which necessarily results in a structure which is different from the structure of the prior art combination. Therefore, Applicant's arguments are not commensurate in scope with the claimed invention.

The claimed invention is directed to a filter, such as a nonwoven fabric, formed from fibers or filaments, wherein the fibers are previously treated with an anti-bacterial compound and a biocide which are integrated into the body and core of the fiber. As set forth above, Rohrbach teaches a fibrous element including an antimicrobial agent disposed with in the fiber (see for example Rohrbach, Abstract). Rohrbach teaches that the anti-bacterial compound is TRICLOSAN™, and that the filter is further defined as being constructed from a mixture of non-woven fabrics (Id., column 3 lines 40-55, column 4 lines 54-67, column 6 lines 5-11). Therefore, Rohrbach at least teaches the claimed structure, but does not teach the claimed biocide. Additionally, based on the totality of the teachings of the prior art, it would have been obvious to one of ordinary skill in the anti-bacterial fabric art at the time the invention was made to form the

Art Unit: 1786

anti-bacterial fabric of Rohrbach, wherein the anti-bacterial fabric additionally comprises a biocide such as bromochloro-5,5-dimethylhydantoin, as taught by the Wolf and Farina, as Falder discloses that biofilms are known to form on filters and that multiple anti-bacterial and/or anti-fungal compositions may be necessary to inhibit the growth of various microorganisms, and motivated by the desire of forming a conventional anti-bacterial fabric with additional fungicidal characteristics to inhibit the predictable growth of biofilms on the fabric, as the resulting anti-bacterial fabric would predictably comprise the combined advantageous and beneficial characteristics of anti-bacterial and anti-fungal properties.

Applicant argues that there is no specific mention about the use of the composition on a filter, and its application is superficial when used on the fibrous materials. Examiner respectfully disagrees. As set forth above, Rohrbach suggests various embodiments additionally comprising multiple anti-microbials, as Rohrbach recites that the filter comprises at least one anti-microbial agent in combination (Rohrbach, column 3 line 63 to column 4 line 6). Additionally, Rohrbach suggests that anti-microbial agents include any substance or combination of substances capable of either preventing, slowing or stopping the growth and/or proliferation of any type of microbial population, such as, but not limited to bacteria, fungi and the like.

Falder additionally teaches anti-microbials which may be used in filters (Falder, paragraphs 0001-0032, 0045-0087, 0090-0101, 0250-0285, Tables 13-15). Falder acknowledges that microbial colonies replicate rapidly to form colonies, forming biofilms on any substrate surface exposed to bacteria and some amount of water (Id., paragraphs 0002 and 0003). Falder discloses that biofilms are more hazardous to health than individual microorganisms (Id.) and that biofilms can be formed by a single bacterial species, or several species of bacteria and fungi

Art Unit: 1786

(Id.). Falder discloses and suggests that anti-microbial agents vary in their effectiveness as they are only effective against certain microorganisms (Id., paragraph 0025), which entails that their use is limited as they are not effective against all types of microorganisms (Id.).

Wolf teaches a class of fungicides comprising 1,3-dihalohydantoin (Wolf, column 1 line 16 to column 4 line 26), and Farina similarly discloses a composition comprising dihalogenated hydantoin which is used to remove or inhibit the formation of biofilms (Farina, column 1 line 7 to column 4 line 27). Farina teaches that the composition uses biocides to enhance overall biocidal control, as biocides prevent the growth of, inhibit the growth of, or kill microorganisms (Id., column 1 line 55 to column 2 line 29). Farina teaches that any substrate susceptible to the formation of biofilms and/or growth of microorganisms is suitable for treatment with the aforementioned compositions (Id., column 4 lines 11-24).

Based on the totality of the teachings of the prior art, it would have been obvious to one of ordinary skill in the anti-bacterial fabric art at the time the invention was made to form the anti-bacterial fabric of Rohrbach, wherein the anti-bacterial fabric additionally comprises a biocide such as bromochloro-5,5-dimethylhydantoin, as taught by the Wolf and Farina, as Falder discloses that biofilms are known to form on filters and that multiple anti-bacterial and/or anti-fungal compositions may be necessary to inhibit the growth of various microorganisms, and motivated by the desire of forming a conventional anti-bacterial fabric with additional fungicidal characteristics to inhibit the predictable growth of biofilms on the fabric, as the resulting anti-bacterial fabric would predictably comprise the combined advantageous and beneficial characteristics of anti-bacterial and anti-fungal properties.

Art Unit: 1786

Additionally, although Applicant argues that Wolf and Farina do not disclose the compound claimed, it should be noted that the hydantoins disclosed in Wolf and Farina each recite that each of the “1” and “3” positions may comprise bromine or chlorine, and that R¹ and R² can each be methyl groups, such as bromochloro-5,5-dimethylhydantoin (Farina, column 2 line 30-48).

Although Applicant argues that Wolf and Farina do not explicitly inform of the application of the compound for Legionella, or its application in filtration systems, Wolf and Farina are recited to show fungicides and biocides and their properties known in the art. Since the prior art combination teaches the suitability of multiple anti-microbial agents in filters due to their effectiveness, including the issues of biofilms forming on filters, and the suitability of specific biocides which remove or inhibit the formation of biofilms, it would have been obvious to one of ordinary skill in the filter art to form the fibers of Rohrbach, additionally comprising a bromochloro-5,5-dimethylhydantoin biocide composition, as taught by the Wolf and Farina, as Falder discloses that biofilms are known to form on filters and that multiple anti-bacterial and/or anti-fungal compositions may be necessary to inhibit the growth of various microorganisms, and motivated by the desire of forming a conventional anti-bacterial fabric with additional fungicidal characteristics to inhibit the predictable growth of biofilms on the fabric, as the resulting anti-bacterial fabric would predictably comprise the combined advantageous and beneficial characteristics of anti-bacterial and anti-fungal properties.

Applicant argues that the combination of references would not render the claimed invention obvious, as the combination of references does not lead to a filter with the characteristics described in the claimed invention for the use detailed therein, nor is there a

Art Unit: 1786

description of the specific combination of TRICLOSAN and the claimed biocide integrated in the body and nucleus of the fiber used for the manufacture of the non-woven fabric.

Regarding Applicant's arguments, Examiner respectfully disagrees. As set forth above, and not repeated here, the prior art combination renders obvious the claimed filter.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER Y. CHOI whose telephone number is (571)272-6730. The examiner can normally be reached on Monday - Friday, 08:00 - 15:00.

Art Unit: 1786

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Peter Y Choi /PYC/
Examiner, Art Unit 1786

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit
1786